

Dr. Swati Tiwari
Ph: +91 11 26738755
Email: swati_tiwari@mail.jnu.ac.in

Education:

Ph. D. (Life Sciences), Jawaharlal Nehru University, New Delhi.
M. Sc. (Biochemistry), Lucknow University, Lucknow

Career:

2008- Assistant Professor, School of Biotechnology, JNU, New Delhi
2005-2008 Assistant Professor, School of Biotechnology, GGSIP University, Delhi
2004-2005 Research Scientist, School of Environmental Sciences, JNU, New Delhi
(Department of Science and Technology supported)
2001- 2002 Research Fellow, Regulation of Protein Function Laboratory, National
Cancer Institute, National Institutes of Health, Bethesda, USA
1996-2000 Visiting Fellow, Laboratory of Immune Cell Biology, National Cancer
Institute, National Institutes of Health, Bethesda. USA

Area of Interest:

We have special interest in inter-disciplinary studies to understand the role of ubiquitin-proteasome system in the control of cellular functions in order to identify key players that can be utilized as diagnostic markers or targets for drug development. The projects are focussed on human cells and a protozoan parasite *Entamoeba histolytica*

- (a) Structure function analysis of APC/C coactivator protein FZR1 in the context of cell cycle regulation
- (b) FZR1 and Retinoblastoma protein interaction in regulation of G1/S transition
- (c) Structure function analysis of UDP-galactose 4-epimerase
- (d) Role of Ubiquitin pathway in phagocytosis in mammalian cells and the parasite *E. histolytica*
- (e) Ubiquitin pathway mediated regulation of the development changes in *E. histolytica*
- (f) Characterization of 26S proteasomes of *E. histolytica* and screening of selective inhibitors

Honors/Awards:

2016 Visitor's Award for 'Research' as a member of the 'Molecular Parasitology Group' (2016) by Honorable President of India, Shri Pranab Mukherjee
2000-2002 Fogarty International Research Fellowship
1996-2000 Fogarty International Visiting Fellowship
1991-1996 Senior Research Fellowship, Council for Scientific and Industrial Research, Government of India
1988-1990 Junior Research Fellowship, Council for Scientific and Industrial Research, Government of India

Selected Publications:

1. Joshi, N., Hosen, Y.S.K., Narooka, A.R., Gourinath, S., **Tiwari, S.** (2022) Annotation, modelling and validation of 26S proteasomes components of *Entamoeba histolytica*. *Proteins: Structure, Function, Bioinformatics*. (Manuscript under preparation)
2. Lalnunthangi, A., Dakpa, G., **Tiwari, S.** (2022) Multifunctional role of the ubiquitin proteasome pathway in phagocytosis. **Progress in Molecular Biology and Translational Science (PMBTS): Receptor Endocytosis And Signalling In Health And Disease** Volume 194, Chapter 27, pp. 179-217, Elsevier, Eds. Singh, V., Babu, I.
3. Sharma, R., **Tiwari, S.**, Dixit, A. (2021) Covaxin: An overview of its immunogenicity and safety trials in India. **Bioinformatics** 17(10): 840-845
4. Ramanujan, A., Bansal, S., Guha, M., Pande, N. T., **Tiwari S.** (2021) LxCxE motif of the APC/C coactivator subunit FZR1 is critical for interaction with the retinoblastoma protein. **Exp Cell Res.** 404:112632 doi: [10.1016/j.yexcr.2021.112632](https://doi.org/10.1016/j.yexcr.2021.112632)
5. Bansal, S., **Tiwari, S.** (2019) Mechanisms for the temporal regulation of substrate ubiquitination by the anaphase-promoting complex/cyclosome **Cell Div.** 14: 14/ doi: [10.1186/s13008-019-0057-5](https://doi.org/10.1186/s13008-019-0057-5)
6. Kumari, R., Gupta, P. and **Tiwari, S.** (2018) Ubc7/Ube2g2 ortholog in *Entamoeba histolytica*: connection with the plasma membrane and phagocytosis. **Parasitol. Res.** 117, 1599-1611/ doi 10.1007/s00436-018-5842-6
7. Ramanujan, A. and **Tiwari, S.** (2016) APC/C and Retinoblastoma interaction: Cross-talk of Retinoblastoma protein with the Ubiquitin Proteasome Pathway. **Biosci. Rep.** 36/ art:e00377 / doi 10.1042/BSR20160152
8. Arya, S., Sharma, G., Gupta, P. and **Tiwari, S.** (2012) *In silico* analysis of ubiquitin/ubiquitin-like modifiers and their conjugating enzymes in *Entamoeba* species. **Parasitol. Res.** 111: 37-51.
9. J. M. Webster, S. Tiwari, A. M. Weissman and R. J. H. Wojcikiewicz (2003). Inositol 1,4,5-trisphosphate receptor ubiquitination is mediated by mammalian Ubc7, a component of the Endoplasmic Reticulum-Associated Degradation pathway, and is inhibited by chelation of intracellular Zn²⁺. **J. Biol. Chem.**, 278: 38238-38246.
10. A. Magnifico, S. Ettenberg, C. Yang, J. Mariano, S. Tiwari, F. Fang, S. Lipkowitz and A. M. Weissman (2003). HECT E3s target Cbl proteins for proteasomal degradation: implications for tyrosine kinase-mediated regulation. **J. Biol. Chem.**, 278: 43169-43177.
11. Fang, S., Ferrone, M., Yang, C., S. Tiwari and A. M. Weissman (2001). The tumor autocrine motility factor receptor, gp78, is a ubiquitin protein ligase implicated in degradation from the endoplasmic reticulum. **Proc. Natl. Acad. Sci. USA**, 98: 14422-14427.
12. S. Tiwari and A. M. Weissman (2001). Endoplasmic Reticulum Associated Degradation (ERAD) of T-cell receptor subunits: Involvement of ER-associated Ubiquitin Conjugating Enzymes (E2s). **J. Biol. Chem.**, 19: 16193-16200.

MISCELLANEOUS PUBLICATIONS

1. Kumar, D., **Tiwari, S.**, Naithani, S. Govindjee, G. (2022) Remembering Professor Krishna K. Tewari (1937–2017): A Pioneer in Plant Molecular Biology. **Current Plant Biol.**, 29: 100240
2. **Tiwari, S.** (2015) Book review: Photosynthesis: Basics to applications. **Current**

- Science**, 109: 2313
3. **Tiwari, S.** (2015) Book review: Photobiology: The Science of Light and Life. **Current Science**, 108: 2106
 4. **Tiwari, S.**, Tripathy B. C., Jajoo A., Das, A. B., Murata, N., Sane, P. V., Govindjee (2014) Prasanna K. Mohanty (1934–2013): a great photosynthetiker and a wonderful human being who touched the hearts of many. **Photosynth. Res.**, 122: 235-260
 5. Prakash, J. S. S. and **Tiwari S.** (2013) Prasanna Mohanty (1934–2013): a pioneer and a loving teacher. **Physiol Mol Biol Plants** 19: 301-305

Funding

Ongoing projects

DST-DPRP project: National Centre for screening natural products for parasitic diseases

MHRD-STARS project: Delineating the molecular basis of Rho GTPase mediated actin degradation and its implication in amoebic encystation

Completed projects

S. No.	Title of the project	Granting agency	Period
1.	Studies on the folding and stability of an alternatively spliced form of APC/C co-activator Fzr1	DST	2016-2019
2.	Effects of perturbation of pRb-Fzr1-Skp2 axis on mammalian cell cycle regulation	DBT	2013-2016
3.	Investigations on differential expression of ubiquitin proteasome pathway genes during stage conversion in <i>Entamoeba</i> species	ICMR	2017-2020
4.	Analysis of ubiquitin-proteasome mediated quality control of membrane and secretory proteins in <i>Entamoeba histolytica</i>	DRDO	2008-2011
5.	Characterization of ubiquitin-proteasome pathway in protozoan parasite <i>Entamoeba histolytica</i>	DST	2006-2010